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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/455,851	12/07/1999	DAVID ALLEN SLUZEWSKI	SEA8994/M&G3	5638

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EXAMINER

RENNER, CRAIG A

ART UNIT PAPER NUMBER

2652

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/455,851	Applicant(s) SLUZEWSKI ET AL.	
	Examiner Craig A. Renner	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-18 and 34-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-18 and 34-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03 September 2004 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "transducer" (set forth in line 3 of claim 35) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and

appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informality:

In lines 5-6 of claim 34, "wherein the first surface positioned" should be changed to --wherein the first surface is positioned-- for better clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-18 and 38-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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a. In lines 1-3 of claim 17, "wherein the slider includes first, second, third, and fourth interconnect pads disposed on the back of the slider" is indefinite as it is misdescriptive of the disclosure, which details/shows that the flex circuit **144** includes first, second, third, and fourth interconnect pads **150a**, **150b**, **150c**, **150d** disposed on the second surface of the flex circuit as shown in **FIG. 4**.

b. In lines 3 and 5 of claim 18, lines 2-3 and 3-4 of claim 38, and lines 3 and 5 of claim 39, each instance of "the slider/MR head" is indefinite because it lacks clear and/or positive antecedent basis.

c. In lines 1-3 of claim 38, "wherein the slider includes first, second, third, and fourth interconnect pads disposed on the back of the slider/MR head" is indefinite as it is misdescriptive of the disclosure, which details/shows that the flex circuit **144** includes first, second, third, and fourth interconnect pads **150a**, **150b**, **150c**, **150d** disposed on the second surface of the flex circuit as shown in **FIG. 4**.

d. Claims 40 and 41 inherit the indefiniteness associated with base claims 38 and 39 and stand rejected as well.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 15-18 and 34-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Zarouri et al. (US 5,771,138).

With respect to claims 15-18, Zarouri teaches a head gimbal assembly comprising a suspension (4); a head interconnect circuit (1) being attached to and disposed along the suspension (as shown in FIG. 1F, for instance), the head interconnect circuit including a first conductive material (lines 41-44 in column 1, for instance); and a slider (2) comprising a top (as shown in FIG. 1E, for instance) and a bottom (as shown in FIG. 1F, for instance); and a flex circuit (8) having a first surface (i.e., the surface that abuts the slider) and a second surface (i.e., the surface that does not abut the slider and is disposed on the same side of the flex circuit as the first surface), the first surface attached to the top of the slider (as shown in FIG. 1E, for instance), and at least one interconnect pad (9) disposed on the second surface of the flex circuit (as shown in FIG. 1F, for instance) for providing electrical contact with the conductive material of the head interconnect circuit (as shown in FIG. 1F, for instance) [as per claim 15]; wherein the slider includes a front end (as shown in FIG. 1E, for instance) and at least one bond pad (7) disposed on the front end, and the flex circuit further includes a second conductive material extending between the at least one bond pad and the at least one interconnect pad (lines 5-7 in column 5, for instance), and the conductive material of the flex circuit is electrically connected to the at least one interconnect pad and to the at least one bond pad (as shown in FIGS. 1E and 1F, for

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instance) [as per claim 16]; wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9) disposed on the second surface of the flex circuit (as shown in FIG. 1F, for instance, in so far as this limitation is definite and understood as detailed in paragraph 5a, supra), and the slider includes first, second, third, and fourth bond pads (each 7) disposed on the front end of the slider (as shown in FIG. 1E, for instance), wherein the at least one interconnect pad is one of the first, second, third, or fourth interconnect pads (as shown in FIG. 1F, for instance), and the at least one bond pad is one of the first, second, third, or fourth bond pads (as shown in FIG. 1E, for instance) [as per claim 17]; and wherein the first and second bond pads are electrically coupled to a first pair of positive and negative polarities of the slider (as shown in FIG. 1E, for instance, i.e., opposite polarities are required for the head(s) therein to function), and the third and fourth bond pads are electrically coupled to a second pair of positive and negative polarities of the slider (as shown in FIG. 1E, for instance, i.e., opposite polarities are required for the head(s) therein to function), and the first, second, third, and fourth interconnect pads are arranged such that the polarities of the bond pads match with polarities from the interconnect pads (as shown in FIGS. 1E and 1F, for instance, i.e., matching polarities are required for the head(s) to function) [as per claim 18].

With respect to claims 34-41, Zarouri teaches a head gimbal assembly comprising a suspension (4), the suspension having a plurality of first conductive material (1); a slider (2) having a top (as shown in FIG. 1E, for instance) and a bottom (as shown in FIG. 1F, for instance); a flex circuit (8) having a first surface (i.e., the

surface that abuts the slider) and a second surface (i.e., the surface that does not abut the slider and is disposed on the same side of the flex circuit as the first surface), wherein the first surface is positioned on the top of the slider (as shown in FIG. 1E, for instance), further, wherein the flex circuit has a plurality of second conductive material (includes adjacent 9, for instance) positioned on the second surface (as shown in FIG. 1F, for instance); and at least one interconnect pad (9) disposed between the plurality of first conductive material and the plurality of second conductive material (as shown in FIG. 1F, for instance) to establish an electrical connection (as shown in FIG. 1F, for instance) [as per claim 34]; wherein the slider further includes at least one bond pad (7), wherein the bond pad provides for an electrical connection to a transducer (lines 39-41 in column 2, for instance) positioned in the slider [as per claim 35]; wherein the plurality of second conductive material extends and is electrically connected to the bond pad (as shown in FIG. 1E, for instance) [as per claim 36]; wherein the slider further includes a front end (as shown in FIG. 1E, for instance), further wherein the bond pad is positioned on the front end (as shown in FIG. 1E, for instance) [as per claim 37]; wherein the flex circuit includes first, second, third, and fourth interconnect pads (each 9) disposed on the second surface of the flex circuit (as shown in FIG. 1F, for instance, in so far as this limitation is definite and understood as detailed in paragraph 5c, supra), and the slider includes first, second, third, and fourth bond pads (each 7) disposed on the front end of the slider (as shown in FIG. 1E, for instance), wherein the at least one interconnect pad is one of the first, second, third, or fourth interconnect pads (as shown in FIG. 1F, for instance), and the at least one bond pad is one of the first, second, third, or fourth bond

pads (as shown in FIG. 1E, for instance) [as per claim 38]; wherein the first and second bond pads are electrically coupled to a first pair of positive and negative polarities of the slider (as shown in FIG. 1E, for instance, i.e., opposite polarities are required for the head(s) therein to function), and the third and fourth bond pads are electrically coupled to a second pair of positive and negative polarities of the slider (as shown in FIG. 1E, for instance, i.e., opposite polarities are required for the head(s) therein to function) [as per claim 39]; wherein the first, second, third, and fourth interconnect pads are arranged such that the polarities of the bond pads match with polarities from the interconnect pads (as shown in FIGS. 1E and 1F, for instance, i.e., matching polarities are required for the head(s) to function) [as per claim 40]; and wherein the first and second interconnect pads are electrically connected to the first and second bond pads of the slider, respectively (as shown in FIGS. 1E and 1F, for instance), and the third and fourth interconnect pads are electrically connected to the third and fourth bond pads of the slider, respectively (as shown in FIGS. 1E and 1F, for instance) [as per claim 41].

8. Claims 15 and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson et al. (US 5,768,062).

With respect to claim 15, Anderson teaches a head gimbal assembly comprising a suspension (5a); a head interconnect circuit (includes 5e) being attached to and disposed along the suspension (as shown in FIG. 8, for instance); the head interconnect circuit including a first conductive material; and a slider (5c) comprising a top and a bottom; and a flex circuit (5b) having a first surface and a second surface, the first

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surface attached to the top of the slider (as shown in FIG. 5, for instance), and at least one interconnect pad (at least one of 5b4, 5b5 and 5b6) disposed on the second surface of the flex circuit (as shown in FIGS. 4-5, for instance) for providing electrical contact with the conductive material of the head interconnect circuit (as shown in FIG. 4, for instance).

With respect to claims 34-36, Anderson teaches a head gimbal assembly comprising a suspension (5a), the suspension having a plurality of first conductive material (each 53); a slider (5c) having a top and a bottom; a flex circuit (5b) having a first surface and a second surface, wherein the first surface is positioned on the top of the slider (as shown in FIG. 5, for instance), further, wherein the flex circuit has a plurality of second conductive material (5b4, 5b5, and 5b6) positioned on the second surface (as shown in FIGS. 4-5, for instance); and at least one interconnect pad (at least one of 5m1, 5m2, and 5m3a) disposed between the plurality of first conductive material and the plurality of second conductive material (as shown in FIG. 4, for instance) to establish an electrical connection (as shown in FIG. 4, for instance) [as per claim 34]; wherein the slider further includes at least one bond pad (at least one of 5c24 and 5c25), wherein the bond pad provides for an electrical connection to a transducer (5c21) positioned in the slider [as per claim 35]; and wherein the plurality of second conductive material extends and is electrically connected to the bond pad (as shown in FIG. 4, for instance) [as per claim 36].

Response to Arguments

9. Applicant's arguments filed 03 September 2004 have been fully considered but they are not persuasive.

The applicant argues that Zarouri does not teach that the "first surface of the flex circuit is attached to the top of the slider and either conductive material or an interconnect pad is positioned on the second surface." This argument, however, is not found to be persuasive as Zarouri does teach that a first surface (i.e., the surface that abuts the slider) of a flex circuit (8) is attached to a top of a slider (2, as shown in FIG. 1E, for instance) and either conductive material or an interconnect pad (9, as shown in FIG. 1F, for instance) is positioned on a second surface (i.e., the surface that does not abut the slider and is disposed on the same side of the flex circuit as the first surface). Note that the limitation "a first and second surface" does not necessarily require these surfaces to be on opposite sides.

The applicant also asserts that Zarouri does not teach "an interconnect pad positioned on the flex circuit for electrical connection to the conductive material on the suspension." This argument, however, is not found to be persuasive as Zarouri does teach an interconnect pad (9, as shown in FIG. 1F, for instance) positioned on a flex circuit (8) for electrical connection to conductive material (1) on a suspension (4, as shown in FIG. 1F, for instance).

The applicant lastly argues that "Anderson does not disclose, teach or suggest a flex circuit attached to the top of the slider." This argument, however, is not found to be persuasive as Anderson does teach a flex circuit (5b) attached to a top of a slider (5c,

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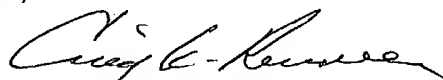
as shown in FIG. 5, for instance). Note that element 5b of Anderson may be considered a flex circuit as it is flexible and contains circuit traces.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Craig A. Renner
Primary Examiner
Art Unit 2652

CAR